DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Casey, William
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-027142
Date Inspected: 04-Feb-2012

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 700
OSM Departure Time: 1530
Location: Job Site

CWI Name:	See Below			**CWI Present:**	☑ Yes	☐ No	
Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: OBG

Summary of Items Observed:

At the start of the shift this Quality Assurance Lead Inspector (QAI) traveled to the SAS project site and observed the work and the inspection performed by American Bridge/Fluor Enterprises (AB/F) Quality Control (QC) personnel. The observations and inspections were performed as noted below:

A). This Quality Assurance Lead Inspector (QALI) assigned the QA Inspectors to the following, but not limited to the work station(s) listed , to observe the welding and the QC inspection of the following:

Doug Frey-OBG E12 and OBG E13 (Observation of repair welding and QC inspection of the lifting lug holes) OBG field splice E13/E14 (Observation of the welding and QC inspection of the deck splice identified as "A2") and performed QA/NDE verification.

Joselito Lizardo-OBG W5 and W8 (Observation of the fit-up, welding and QC inspection of the Deck Access Hole, DAH), FW Spencer (Observation of pipe welding and QC inspection of utility piping systems) and QA/NDE verification.

Skyway-No work

NOTE: See QA daily Weld Inspection Reports (WIR) and NDE reports for additional information and details.

Quality Assurance Lead Inspector (QALI) Summary

This QA Lead Inspector (QALI) observed the QA Inspector's Douglas Frey and Joselito Lizardo monitor the work performed by the QC inspectors at random intervals and also observed the QA Inspectors verify the welding parameters, the minimum preheat and the maximum interpass temperatures for compliance with the contract specifications. The QAI's utilized a Fluke 337 clamp meter to measure the electrical welding parameters, Tempil Heat Indicators and/or a Fluke 63 IR Thermometer for verifying the preheat and interpass temperatures. At the conclusion of the shift, this QA Lead Inspector discussed and reviewed the work performed by the QAI's in regards to the various observations and the verifications of the WPS's, consumables, welding parameters, preheat and interpass temperatures. The QAI observations of the QC inspection and verification of the welding parameters performed on this date appeared to comply with the contract specifications and no issues were noted.

This QALI observed the following work:

OBG Field Splice W13/W14

The QAI observed the CJP groove welding, QC inspection/testing of the bottom plate splice identified as 13W-14W-D2 and D3. The welding was performed by the welder Rory Hogan ID # 3186 utilizing the FCAW-G welding process as per the WPS ABF-WPS-D15-3110-4, Rev. 0. The WPS was also utilized by the QC inspector, Sal Merino, as a reference to monitor and verify the welding parameters and surface temperatures. The welding parameters were measured and noted by the QC inspector as follows: 232 amps, 23.7 volts and 210 mm/m and the minimum preheat temperature of 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius. This QAI observed the welding and QC inspection at random intervals. The in progress welding appeared to comply with the contract specifications.

This QAI also observed Mr. Merino perform a Magnetic Particle Test (MPT) of the back gouged surface prior to the welding of the transverse weld. The testing was performed as per the contract specifications and at the conclusion of the testing no rejectable indications were noted by the QC inspector.

Later in the shift, this QAI also observed the back gouging performed by Richard Garcia utilizing the manual Air Carbon Arc (ACA) gouging method of the single-v-groove weld identified as Weld Number (WN): 13W/14W-A4. The back gouging of the "B" face was not completed during this shift.

OBG W13 Lifting Lug Holes (SPCM)

The QAI observed the welder Eric Sparks ID # 3040 perform the welding of the Complete Joint Penetration (CJP) groove weld identified as 13W-PP118.5-W4, # 4 on the "A" deck of the Orthotropic Box Girder (OBG) W13. The welding was performed utilizing the Shielded Metal Arc Welding (SMAW) process as per the WPS identified as ABF-WPS-D15-1110A-CU, Rev. 0 which was also used by the QC inspector Sal Merino as a reference to monitor and verify the welding parameters. The welding parameters were observed and verified by the QAI as 132 amps utilizing the 3.2 mm electrode as per the WPS. The welding was performed in the overhead (4G) position with the work placed in an approximately horizontal plane and the weld metal deposited from the upper side. The groove joint appeared to comply with the AWS joint designation identified as B-U4a and the minimum preheat temperature of 40 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius were verified by

the QC inspector. The welding was not completed during this shift. The MPT of the back gouged surface was also performed and accepted by Mr. Merino.

QA Summary

The QC inspection and welding performed on the lifting lug holes and field splices was observed at random intervals by this QA Inspector. The QAI observations included verification of the welding parameters, the minimum preheat and the maximum interpass temperatures for compliance with the contract specifications. This QAI utilized a Fluke 337 clamp meter to measure the electrical welding parameters, Tempil Heat Indicators and/or a Fluke 63 IR Thermometer for verifying the preheat and interpass temperatures. The random observations, verifications of the welding and QC inspection, WPS's, consumables, welding parameters, preheat and interpass temperatures appeared to comply with the contract specifications.

This QA Inspector continued the daily review of field inspection reports and update of the field document control tracking records regarding the Orthotropic Box Girders (OBG, Longitudinal and Transverse "A" Deck Stiffeners, Deck Access Holes and the Tower Shear plates).

Summary of Conversations:

There were general conversations with Quality Control Lead Inspector, Bonifacio Daquinag, Jr., at the start of the shift regarding the location of welding, inspection personnel scheduled for this shift.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Reyes,Danny	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer